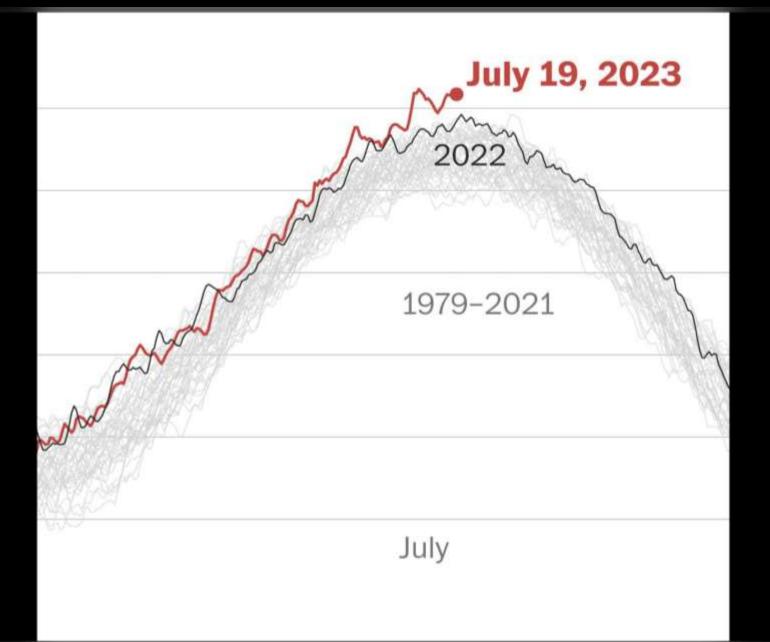




July 2023

From Africa to Antarctica, all seven of Earth's continents have experienced extraordinary extreme weather events.



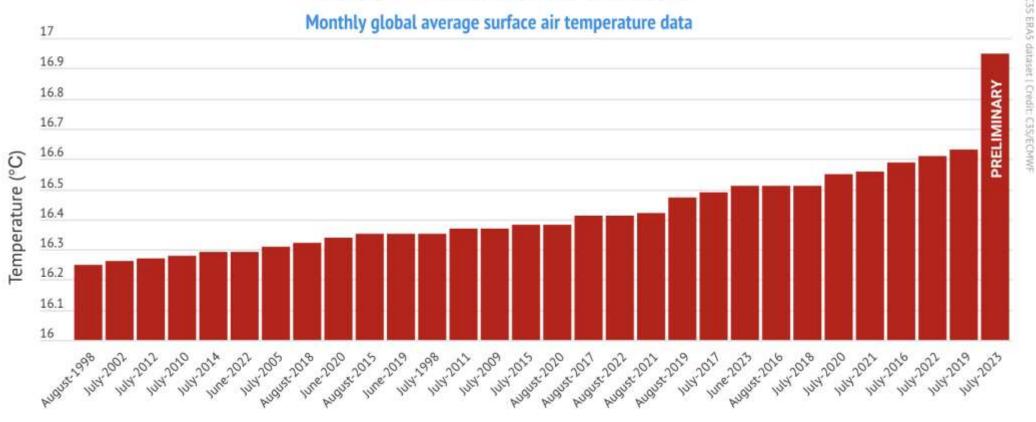






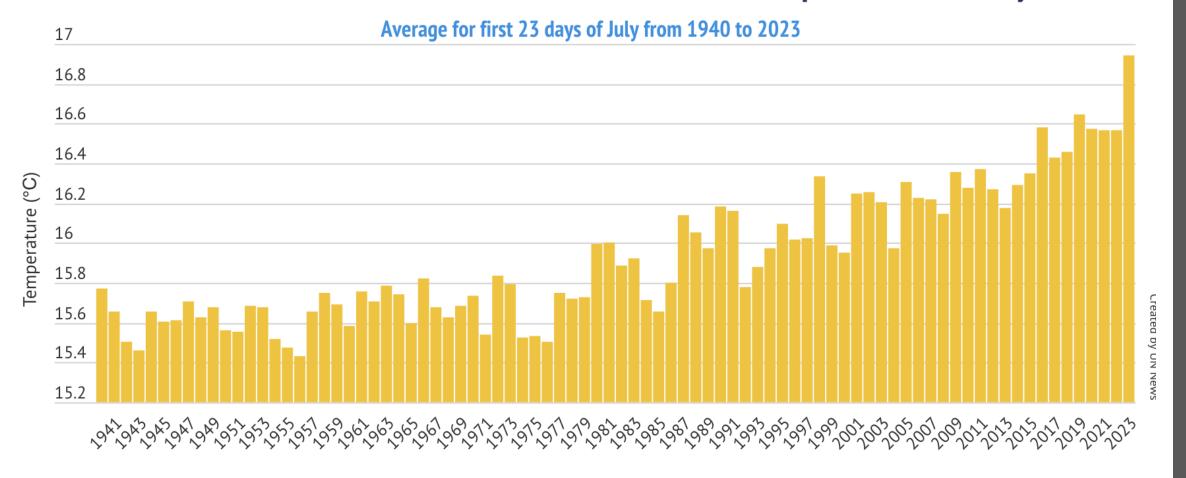
July 2023 is set to be the hottest month on record

The 30 warmest months on record

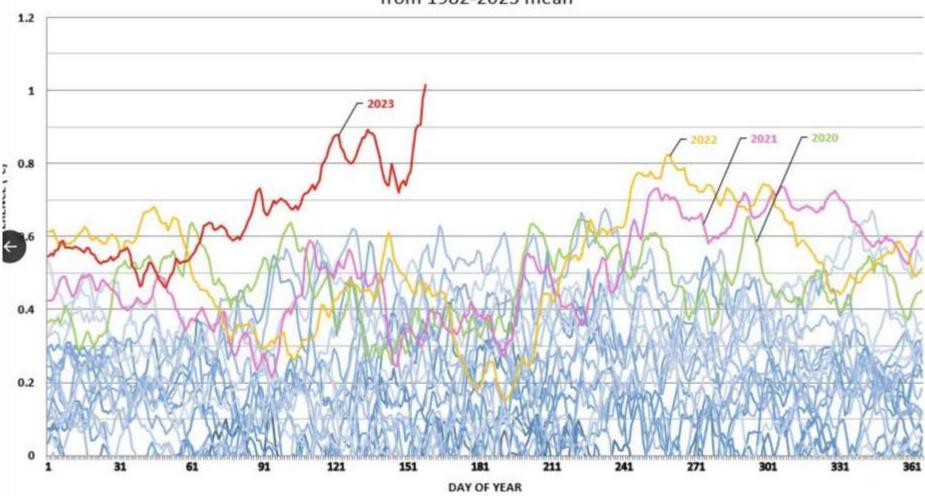




Hottest three weeks on record: Global surface air temperature 1-23 July



North Atlantic (0-60N) Sea Surface Temperature Anomaly (SSTA) from 1982-2023 mean



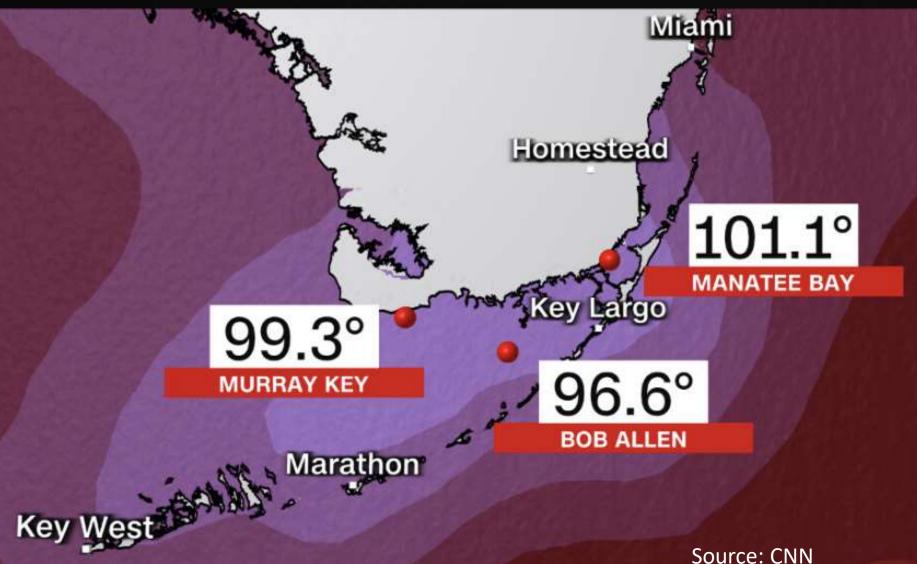
©Leon Simons, adjusted from Prof. Eliot Jacobson - Data source: NOAA Optimum Interpolation SST (OISST) dataset version 2.1 Through https://climatereanalyzer.org/clim/sst_daily/, Climate Change Institute University of Main. Data up to June 6th, 2023





Weather OBSERVED WATER TEMPERATURES

NATIONAL DATA BUOY CENTER (°F) **MONDAY, JULY 24**











NUMBER OF DAYS PER YEAR **EXCEEDING THE HEAT INDEX** TEMPERATURE OF 100°F IN 2053 131 DAYS 27 DAYS O DAY □ NO DATA FORTUNE SOURCE: FIRST STREET FOUNDATION

Early Days for Extreme Heat





















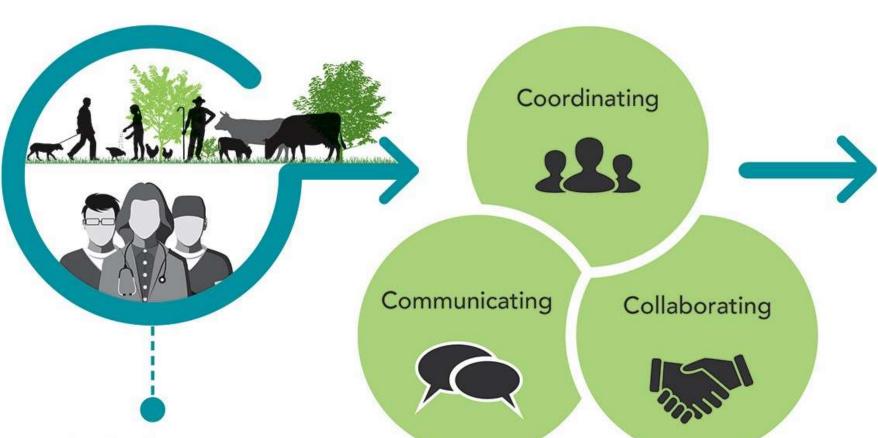








One Health

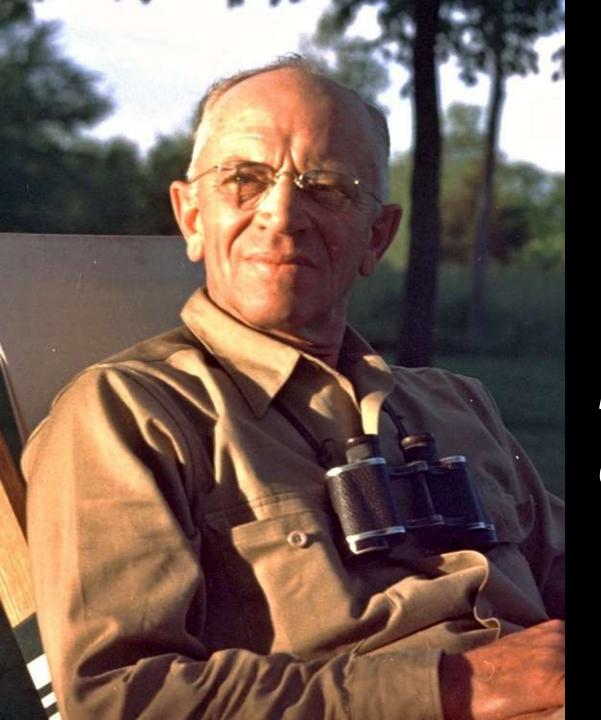


People who protect human, animal, and environmental health, and other partners





To achieve the best health outcomes for people, animals, plants, and our environment



Ecologist Aldo Leopold:

"What's good for our body is good for our ecosystem"

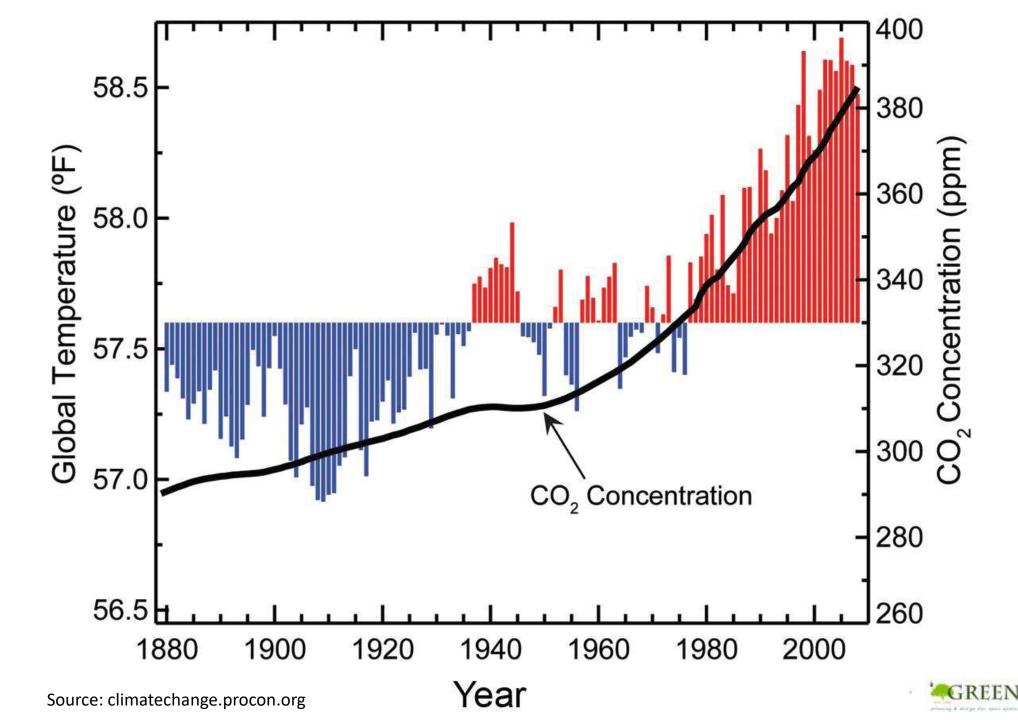


"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

Aldo Leopold, A Sand County Almanac



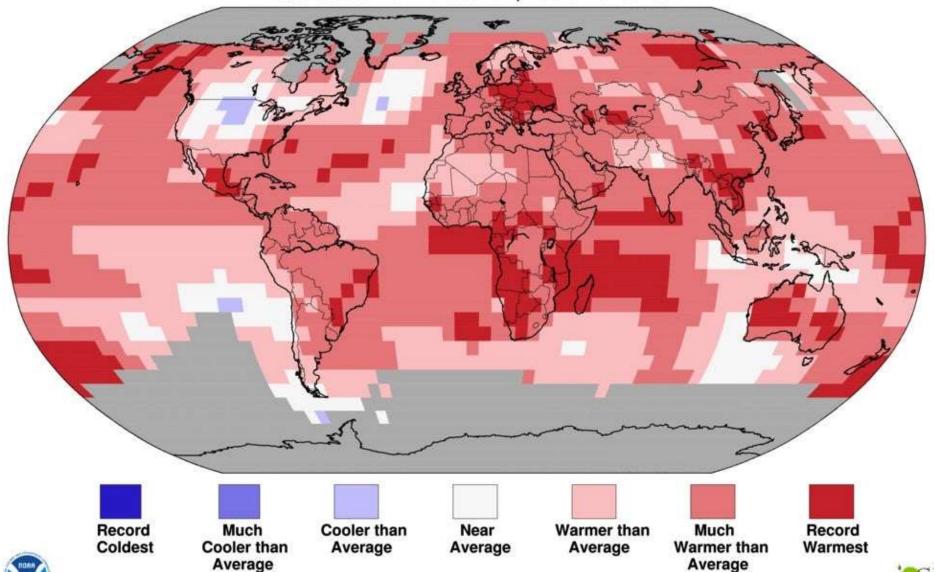




Land & Ocean Temperature Percentiles Jan-Dec 2019

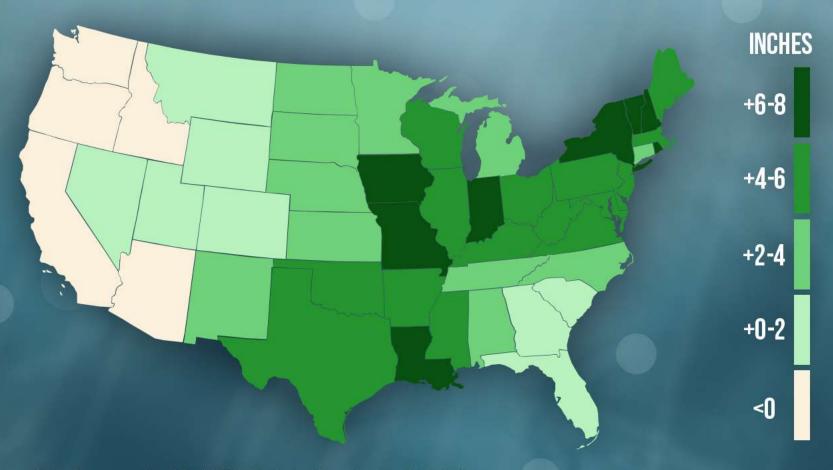
NOAA's National Centers for Environmental Information

Data Source: NOAAGlobalTemp v5.0.0-20200108





WET GETTING WETTER CHANGE IN ANNUAL RAINFALL SINCE 1950



Statewide averages from NOAA NCEI Climate at a Glance. Produced 5/22/2019 Source: NOAA/NCEI Climate at a Glance

CLIMATE CO CENTRAL





Source: Business Insider

Louisiana 2016 North Carolina 2018

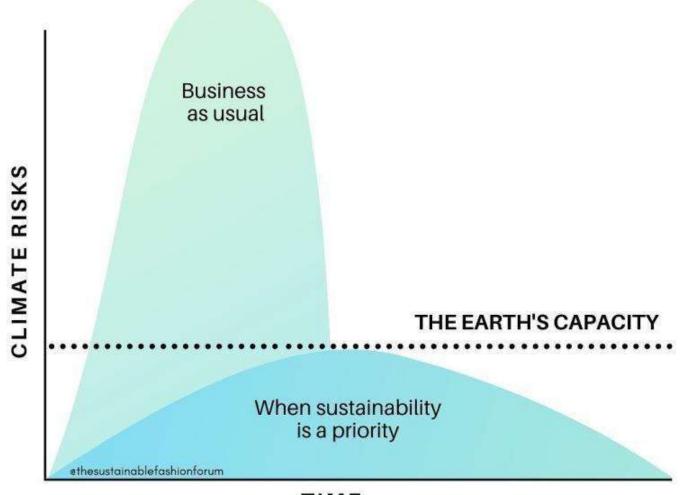
"Water is the blade of climate change that will cut most deeply"

David Festa, Environmental Defense Fund



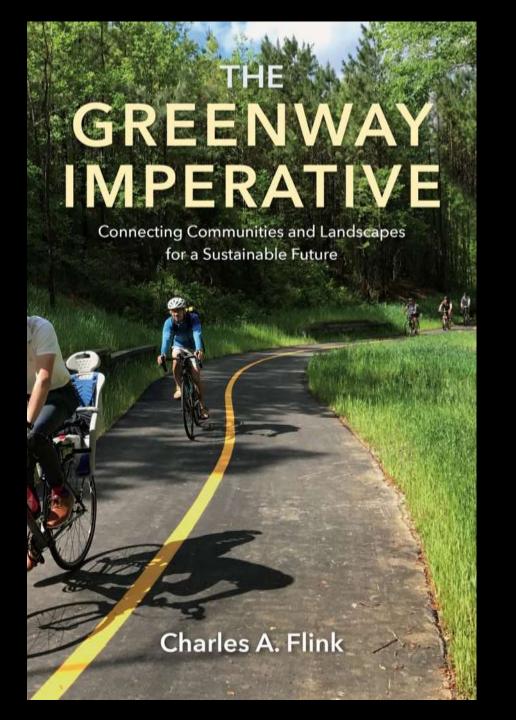
Can Humans Conduct our Lives in a More Sustainable Manner?

LET'S FLATTEN THIS CURVE TOO









Published in March 2020



Im derative

- ... of vital importance, urgent, crucial (adjective)
 - ... an essential or urgent thing (noun)

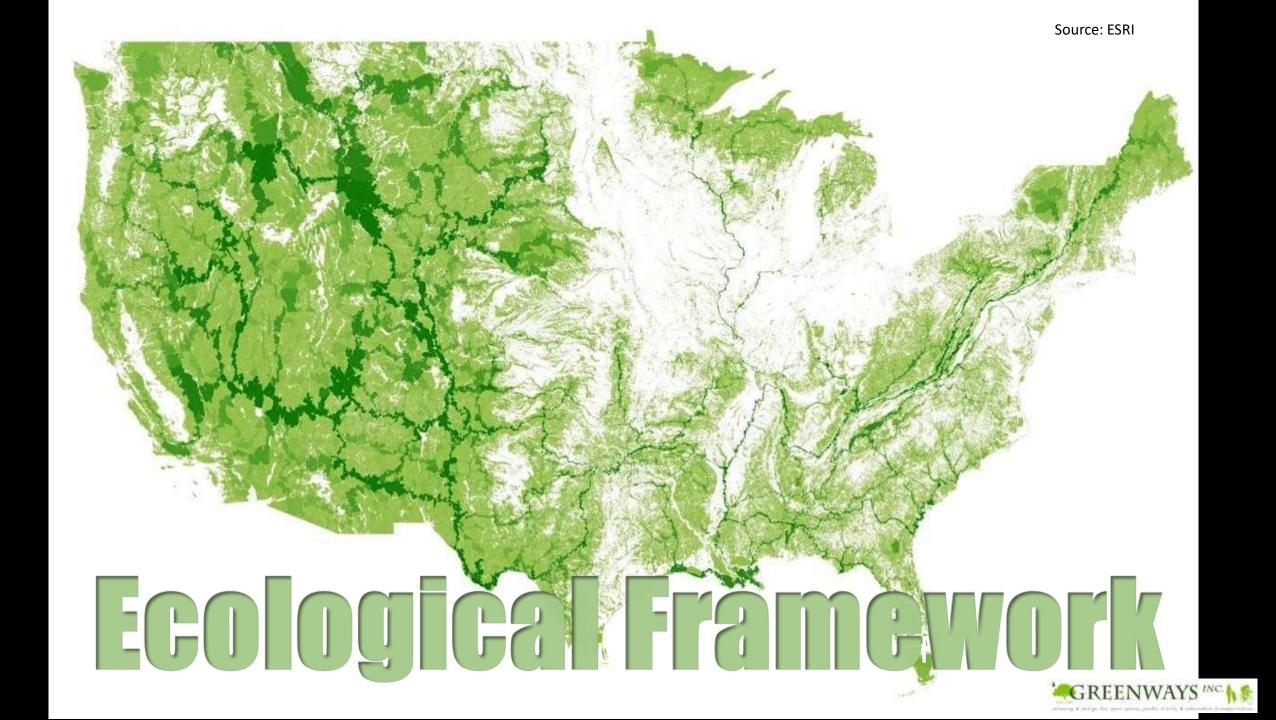
Are greenways an imperative?



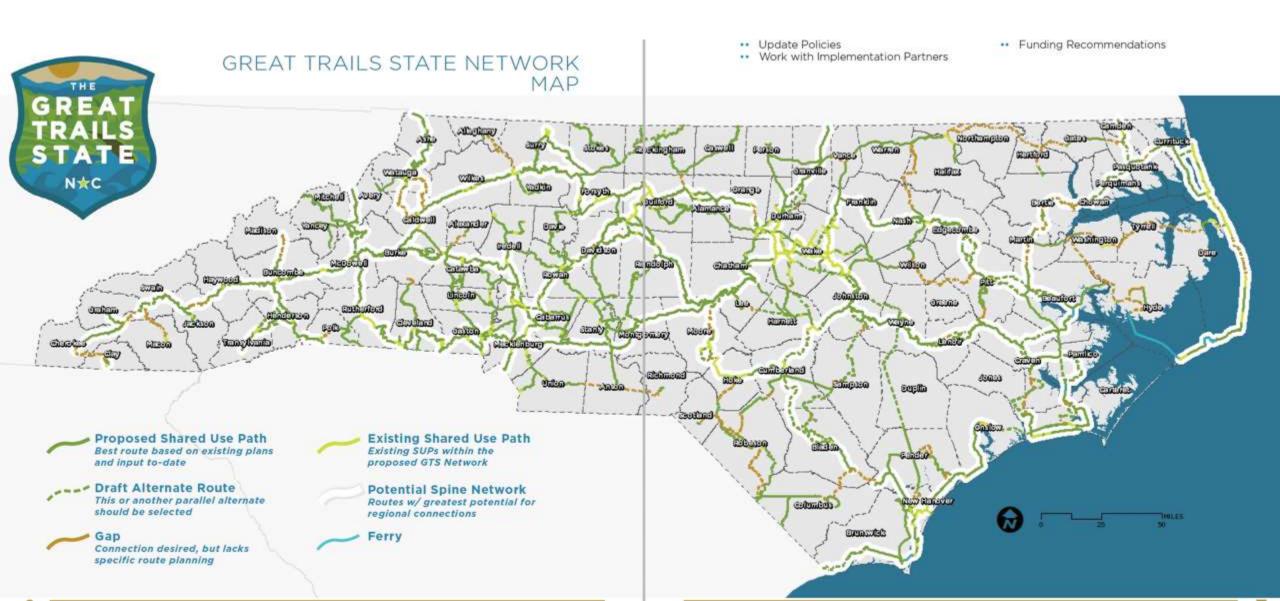
A Call to Action







North Carolina – The Great Trails State









"FOITOWS" (verb) Mision



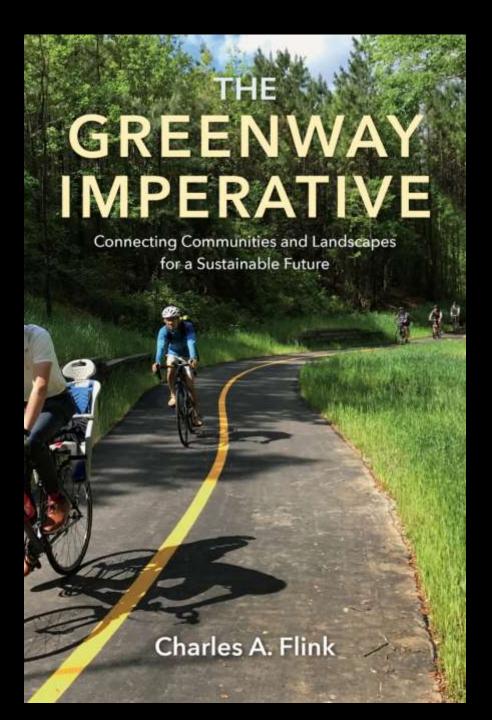


Charleston County Greenbelts Plan



Charleston County South Carolina





Chapter Seven:
Lowcountry Life;
Charleston County
Greenbelt Program,
South Carolina



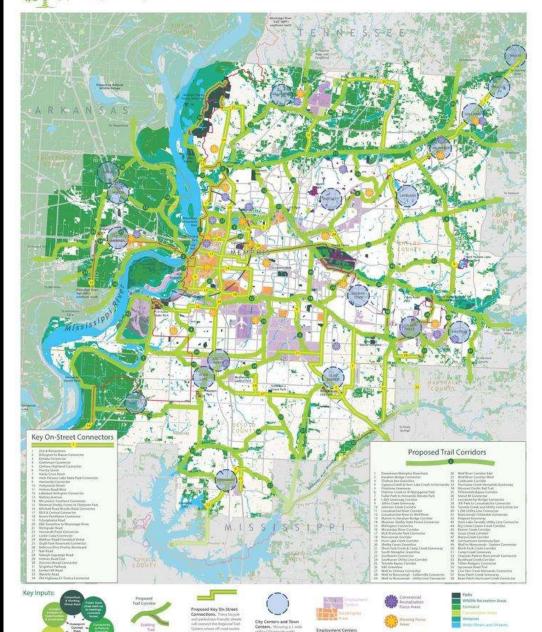
Greenprint

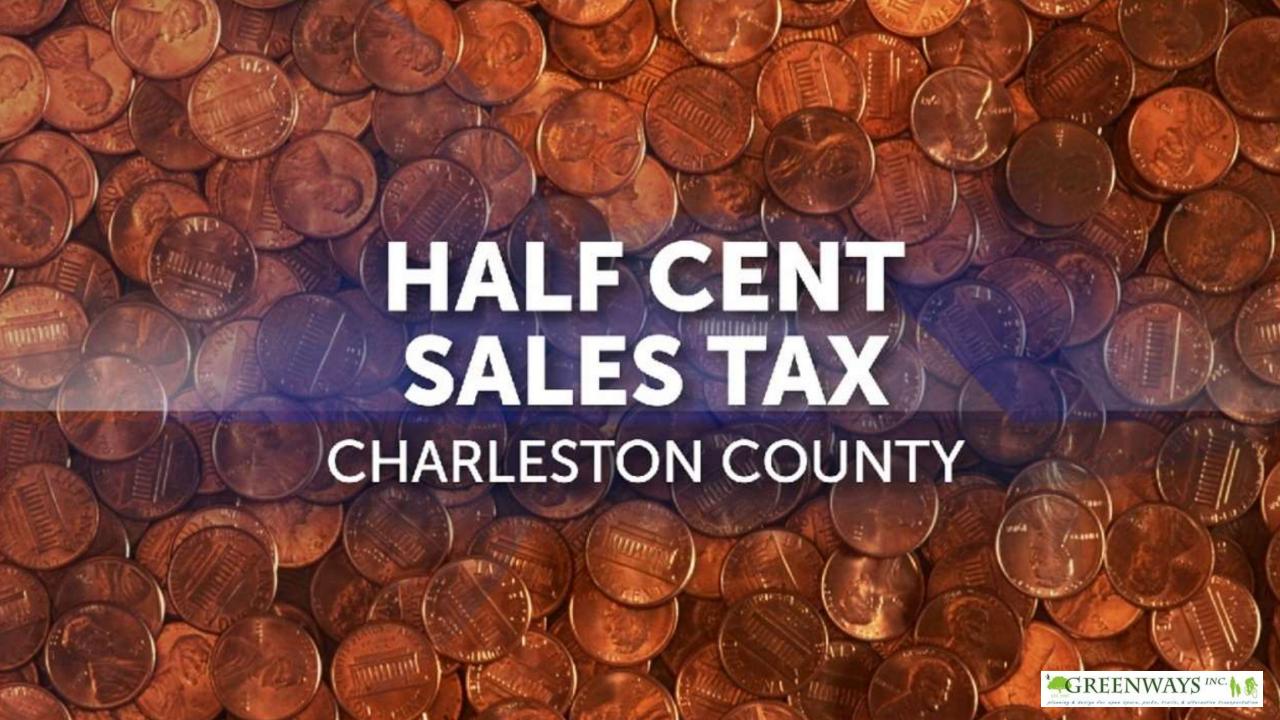
"Just as we would NOT consider building a house without a Blueprint, we should NOT continue to grow our communities without a Greenprint"

Flink 2000











Charleston County Transportation Sales Tax



November 2004 - \$1.3 billion:

\$221 million for Greenbelts



November 2016 - \$2.1 billion:

\$210 million for Greenbelts

http://www.charlestoncountygreenbelt.org





Where the Green Goes 2004 Sales Tax

\$221 Million



\$66.5 Million Rural Greenbelt Program

\$28.5 Million
Urban
Greenbelt
Program





Where the Green Goes 2016 Sales Tax

\$210 Million







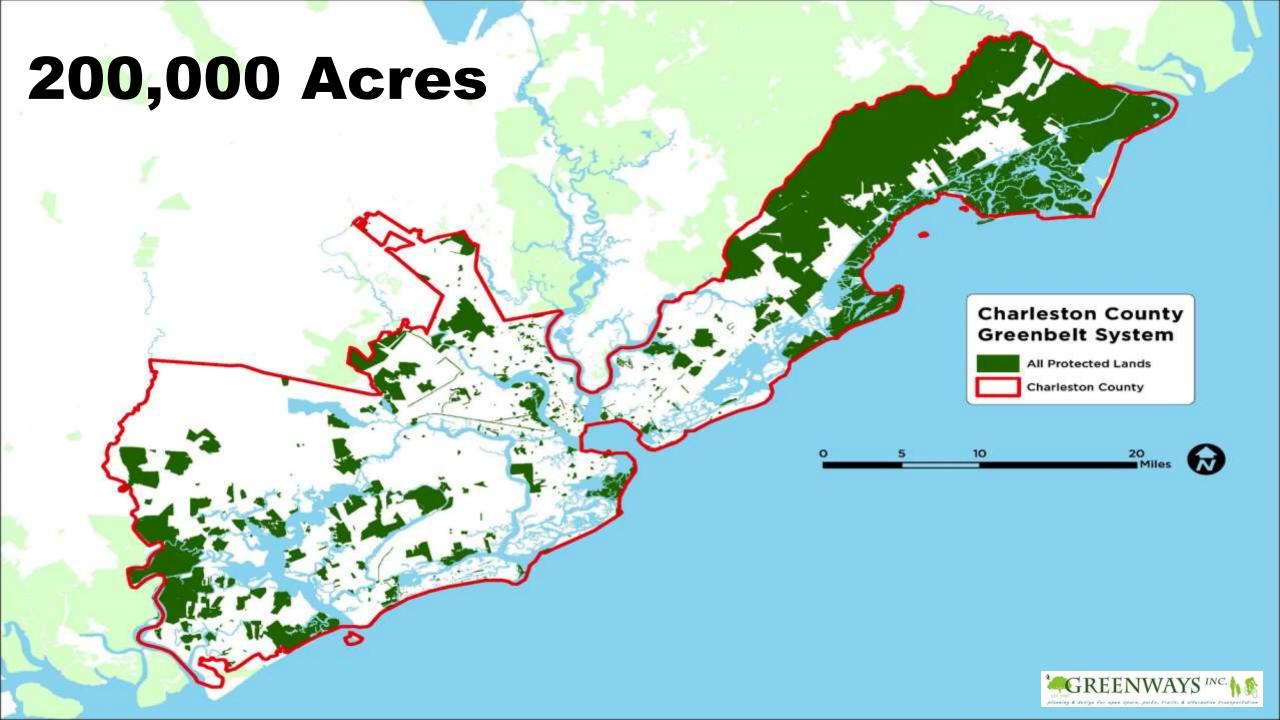


Greenbelt Project Goals

Protecting <u>40,000 acres</u> through the following system components:

- 16,240 acres of rural greenbelt lands
- 10,275 acres in Francis Marion National Forest
- 5,610 acres of Lowcountry wetlands
- 4,675 acres of Park and Recreation Commission-owned lands
- 2,000 acres of urban greenbelt lands
- 1,200 acres of greenway corridors





Greenbelt Program Notes

- Approximately 67% of Charleston County is in a FEMA flood hazard area. Protected land acts as a sponge to absorb floodwater and filter runoff, reducing the need for expensive stormwater infrastructure and protecting surrounding water quality.
- South Carolina fisheries and ocean-based tourism support almost 79,000 jobs and generate over \$4.4 billion in GDP each year in South Carolina.
- In 2017, 6.9 million visitors came to Charleston County, and tourism generated \$7.37 billion in economic impact.

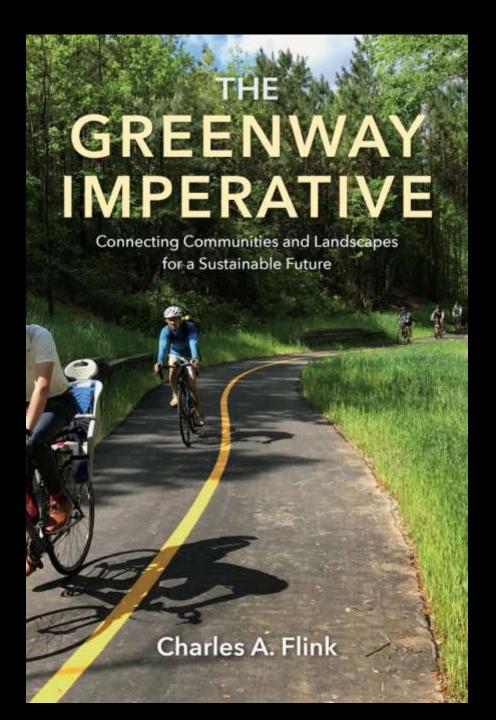


Greenbelt Program Notes

- Charleston County's greenbelt program has completed more than 200 separate land conservation transactions.
- in 2006, The Charleston County Comprehensive Greenbelt Plan was named the South Carolina American Planning Association's **Outstanding Planning Project for Large Jurisdictions**.
- In 2009, the Greenbelt Program received the **United States Forest Service's Partnership Award**.







Chapter Two: Come Hell and High Water; Greater Grand Forks Greenway, North Dakota



Grand Forks Greenway, North Dakota







Design + Engineering Principles for Grand Forks Greenway

- Demolish 694 private homes and 493 non-residential structures
- Relocate 161 private homes and 414 non-residential structures
- Convert 2,200 acres into public greenspace
- Build 20 miles of multi-purpose trails
- Reopen public parks, wildlife and memorial landscapes
- Build an "invisible" flood wall in East Grand Forks, MN
- <u>Build</u> bicycle and pedestrian bridges across Red River
- Program the Greenway for year round use and activity



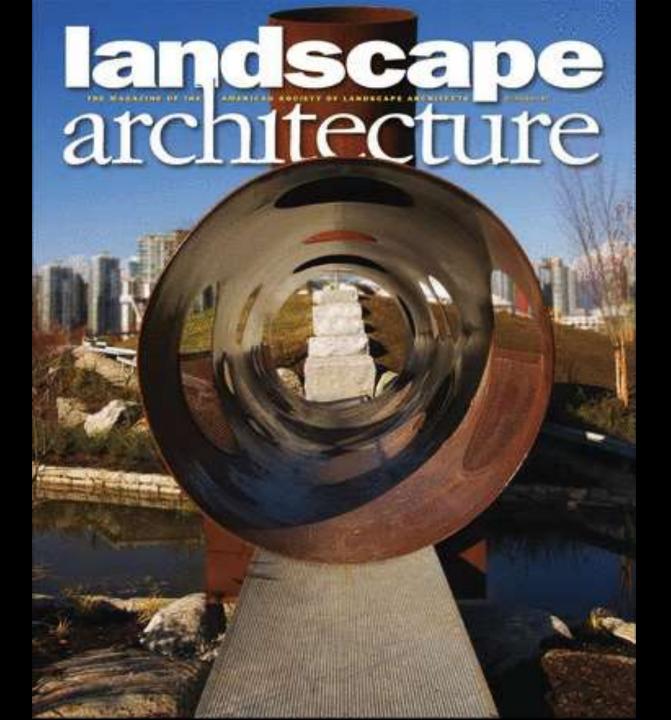


Red River State Recreation Area, MN









"about the best example we have to date" when it comes to flood protection as a public amenity

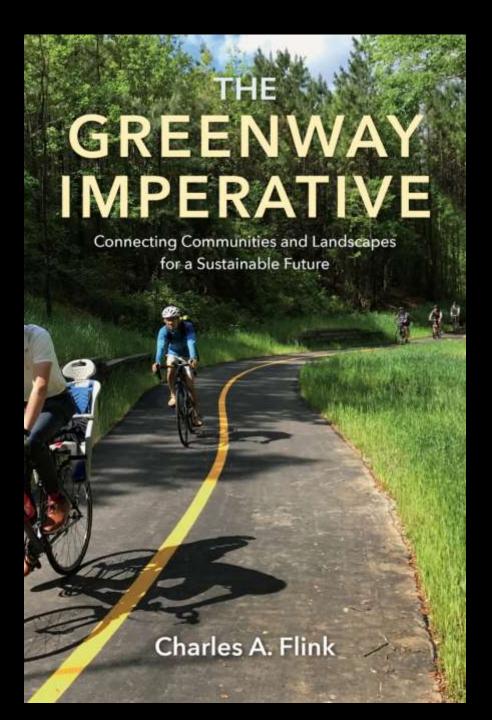
Kevin Holden, US Army Corps of Engineers



Grand Forks Greenway Notes

- Total flood control project is valued at \$400 million, with the federal government paying 50%, North Dakota and Minnesota paying for 30% and Grand Forks and East Grand Forks paying the remainder.
- The FEMA Hazard Mitigation Grant Program projects are valued at more than \$18 million in Grand Forks.
- The National Flood Insurance Program paid out claims total more than \$75 million.
- Greg Wilz, Director of Homeland Security said, "North Dakota has realized 20 years of benefit from the investments made in mitigation efforts after the 1997 flood. **The payback has been huge**."





Chapter Eight: Callin the Hogs; NW
Arkansas Razorback
Greenway





RAZORBACK GREENWAY TRAILHEAD MILE MARKER PEA RIDGE LITTLE FLOCK SPRINGDALE FAYETTEVILLE **** BENTONVILLE GREENLAND CAVE SPRINGS TONTITOWN-FARMINGTON CENTERTON HIGHFILL GRAVETTE









Leveraged Funding Strategy

Primary Funding – Greenway Trail

- Walton Family Foundation \$12 million
- TIGER 2 Grant \$20 million

Baseline: \$32 million



Leveraged Funding

- City of Rogers Enhancements Grant
 - \$270,000 Mercy Hospital Trailhead
 - \$200,000 Mercy Hospital In-kind donation
- City of Springdale TCSP Grant
 - \$400,000 Sanders Ave. Trailhead
 - \$342,000 WFF in-kind donation
- City of Fayetteville Trails Funding
 - \$108,000 Home Depot Foundation
 - \$250,000 City Funds





Leverage Funding

- City of Springdale Lake Springdale Trailhead
 - Endeavor Foundation \$350,000 grant
 - TAP Grant- \$125,000 grant
 - City of Springdale \$150,000 in-kind
- EPA 319 Water Quality Grant
 - Illinois River Watershed Alliance \$250,000
- National Urban Forestry Grant
 - Illinois River Watershed Alliance \$50,000



Total Funding for Razorback Greenway

\$42 million in public and private funding











Tyson Foods, Inc.





What is a Rain Garden?

Rain gardens are a type of green infrastructure - a landscape with a purpose. They are bowl-shaped landscapes that are meant to capture. not hold, rain for 24-48 hours, eliminating the possibility for mosqui-

They capture rain and let is slowly soak into the ground, reducing the amount of runoff that comes from our properties. They come in all shapes and sizes and are versatile. Native plants work best as they are adapted to our region, attract and offer benefits to wildlife, and root systems of native plants help water infiltrate into the ground.

There are many rain gardens in our area, go check one out!

Rain Garden Project Locations

Bentonville, AR

- 1. Benton County Boys and Girls Club
- 2. Benton County Planning & Environmental
- 3. Bentonville Public Library
- 4. Benton County Road Dept.
- 5. Benton County Solid Waste Dept.
- 6. Compton Gardens
- 7. Crystal Bridges/ "A" St. Trailhead

Rogers, AR

- 8. Downtown Rogers
- 9. Horsebarn Trailhead
- 10. Murphy Dog Park
- 11. Northwest Arkansas Community College
- 12. St. Mary's Center for Non-Profits

Cave Springs, AR

- 13. Community Building
- 14. IRWP Watershed Sanctuary

Siloam Springs, AR

- 15. White Water Recreation Park
- 16. John Brown University
- 17. Public Library

Springdale, AR

- 18. Bernice Young Elementary
- 19. Botanical Gardens of the Ozarks
- 20. Helen Tyson Middle School
- 21. Murphy Park
- 22. Shaw Elementary
- 23. Springdale Airport
- 24. Springdale Public Works
- 25. T.G. Smith Elementary 27. Westwood Elementary
- 26. Walker Elementary

Fayetteville, AR

- 28. Butterfield Trail Elementary
- 30. Holt Middle School
- 32. Sunshine House Pre-K
- 34. Trinity United Methodist Church
- 35. Unity Church



Shaw Elementary, Springdale, AR

BELLA VISTA

- 29. Gulley Park
- 31. Leverett Elementary
- 33.Tri-cvcle Farms

- 36. Westside Water Treatment Plant
- 37. Wilson Park

Farmington, AR

38. Randall G. Lynch Middle School

15 16 17

Prairie Grove, AR

39. Senior Center

Lincoln, AR

- 40. Lincoln Elementary
- 41. Lincoln High School

Illinois River Watershed Partnership Green Infrastructure Tour

What is Green Infrastructure?

Green infrastructure is an approach that communities can choose to maintain healthy waters, provide multiple environmental benefits and support sustainable communities. Unlike single-purpose gray stormwater infrastructure, which uses pipes to dispose of rainwater, green infrastructure uses vegetation and soil to manage rainwater where it falls. Examples of green infrastructure include rain gardens, bioswales, pervious paving, tree wells and vegetated walls, to name a few. Refer to the back to see more on green infrastructure.

By weaving natural processes into the built environment, green infrastructure provides not only stormwater management, but also flood mitigation, air quality management, and much more, (US, EPA)

Thanks to our non-point source grant funding, provided by Arkansas Natural Resources Commission, and matching funds provided by our partners and sponsors, we are working to implement green infrastructure along the Razorback Regional Greenway in the Illinois River Watershed. Find a location near you to see first-hand how these projects capture rain, filter and clean pollutants and provide many benefits to our communities!

Green Infrastructure Project Locations

Bentonville, AR

LOWELL

32

Scott Family Amazeum

Rogers, AR

Mercy Trailhead

Springdale, AR Lake Springdale Trailhead

Fayetteville, AR Gordon Long Park Trailhead

Johnson, AR Carol E. Van Scyoc Trailhead

Gentry, AR Arvest Bank To be completed Summer 2015

Completed Spring 2014

To be completed Summer 2015

To be completed Fall 2015

To be completed Spring 2015

Completed Spring 2015



Rogers Mercy Trailhead

Award-winning, green infrastructure design incorporates a bioswale, pervious pathway, native plants and trees, and riparian enhancement along a tributary to Osage Creek.

The Illinois River Watershed Partnership works with Cities, Counties, Schools and Public Facilities to implement Green Infrastructure demonstration projects to educate and train stakeholders on mproving and protecting the Illinois River Watershed.

Illinois River Watershed Partnership www.irwp.org contact@irwp.org









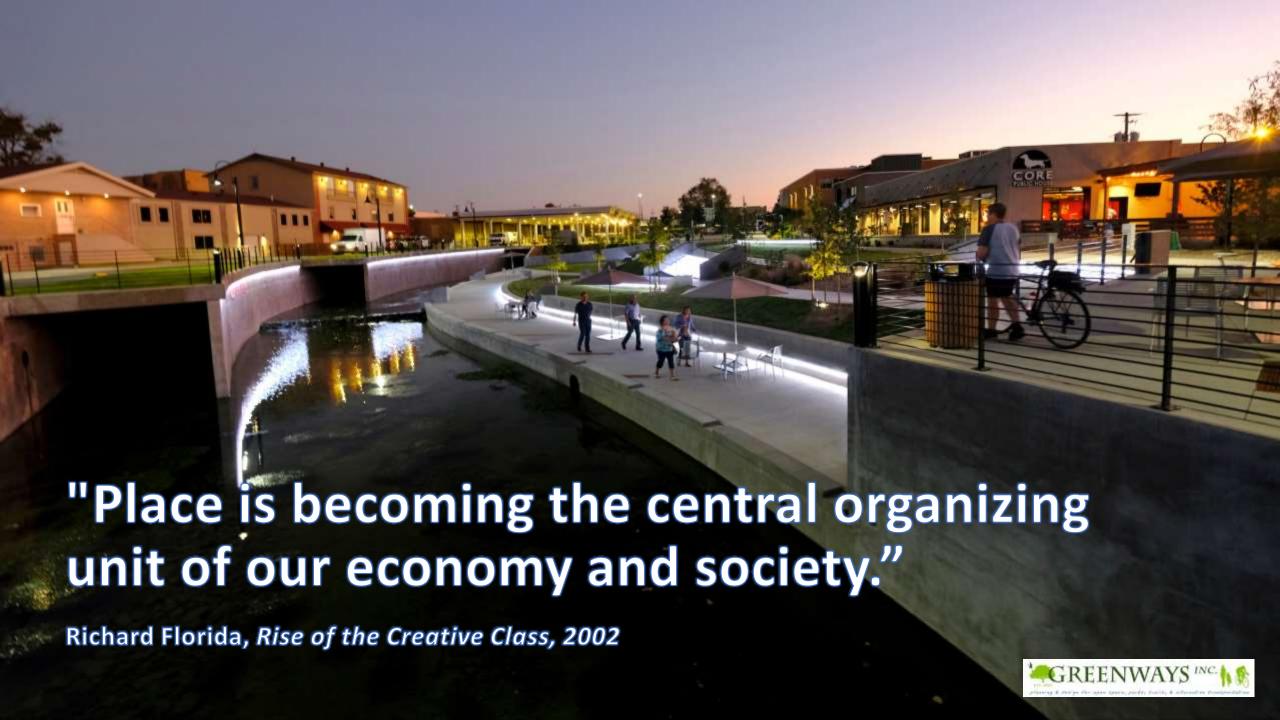






















"Downtown Springdale will be a focus for technology," Tyson CEO Tom Hayes said. "We see that as a place for us to really center everything technology. Also, I'll put the plug in: restaurants, bars, we need more because that's what people want. They want to walk around and enjoy lunch. Right now, there's like two or three places they can go to, and they need a lot more."







Accomplishments of Razorback Greenway

- 38 miles of connected trail
- Links together six communities in two counties
- Trail connects to 36 public schools and University of Arkansas
- Trail goes through 3 downtowns
- Trail links three of largest employers: WalMart, Tysons and JB Hunt
- Trail is within ½ mile of 20% of region's residents (70,000 people)
- Trail is within ½ mile of 40% of employed people (80,000 people)
- Trail links to Crystal Bridges Museum, Ozark Botanical Garden,
 Shiloh Museum
- Trail connected to two large regional hospitals





What does GAOA Fund?

- Much-needed maintenance for critical facilities and infrastructure in our national parks, wildlife refuges, recreation areas, and Bureau of Indian Education (BIE)-funded schools.
- The National Parks and Public Land Legacy Restoration Fund (GAOA LRF) to address the deferred maintenance and repair (DM&R) backlog on public lands. It was authorized at up to \$1.9 billion annually for five years from fiscal year 2021 to fiscal year 2025.
- Permanent full funding for the Land and Water Conservation Fund of \$900 million annually.



What does GAOA Fund?

- Recreational Assets include monuments, memorials, campgrounds, parks, historic sites, refuges, comfort stations, visitor centers, and other structures used for recreational purposes.
- Mission Support and Administration Assets include storage and warehouse facilities, offices, laboratories, agricultural assets, and other assets critical to supporting bureau missions.
- Non-Transportation Infrastructure Assets include utility systems, irrigation and flood control assets, communication systems, and other industrial assets.
- Transportation Assets include roads, bridges, dedicated parking structures, and other critical transportation infrastructure.



Example: North Carolina

- Since 1965, the LWCF program has provided more than \$85 million in matching grants to protect land and support more than 900 state and local park projects. More than 40,000 acres have been acquired with LWCF assistance.
- The Land and Water Conservation Fund (LWCF) provides dollar-for-dollar matching grants to local governments for the acquisition or renovation of existing parks previously developed with LWCF assistance. A local government can request a maximum of \$500,000 with each application.



Example: North Carolina

- North Carolina counties and incorporated municipalities are eligible for LWCF grants. Federally recognized Native American tribes are also eligible.
- LWCF grants can be used to **acquire land** for a public park; to develop outdoor recreation and support facilities; or a combination of both. A project must be **located on a single site**.
- An applicant must match the grant with a minimum of 50 percent. Due to a federal share cap of \$500,000, a greater match is required for projects that exceed total costs of \$1 million.
- An applicant must own the park property. Property acquired or developed with LWCF assistance must be used for public outdoor recreation use in perpetuity.



INFRASTRUCTURE INVESTMENT AND JOBS ACT

PASSES THE SENATE



Infrastructure Investment and Jobs Act

- \$1.2 trillion for infrastructure improvements: roads, bridges, passenger and freight rail, transportation safety, transit, broadband, ports and waterways, airports, drinking water and wastewater, and energy, among other initiatives.
- Reauthorizes Surface Transportation Act for another 5 years.
- \$12.5 billion for National Infrastructure Investments grants, previously known as TIGER and BUILD grants.
- 70% more money, \$1.4 billion, available for Transportation Alternatives Program
- \$ 1 billion in active transportation earmarks



Infrastructure Investment and Jobs Act

- \$1 billion a year for *Safe Streets and Roads for All* grant program to support local initiatives
- \$100 million a year for a new *Healthy Streets* grant program to "deploy cool pavements and porous pavements" to mitigate urban heat islands, improve air quality, and reduce stormwater runoff
- \$1 billion over five years for a new *Reconnecting Communities* competitive grant program, \$200 million for planning and \$800 million for construction



What does the IIJA Fund?

- The legislation is the largest investment in the resilience of physical and natural systems in American history. IIJA will invest more than **\$50 billion** to protect against droughts, heat, floods and wildfires.
- National Institute of Building Sciences (NIBS) finds that for every \$1
 spent on resilience, communities save \$5 to 7 in disaster response
 and recovery.
- The bill will invest \$21 billion clean up Superfund and brownfield sites, reclaim abandoned mine land and cap orphaned oil and gas wells to remediate environmental harms and advance environmental justice.
- Will benefit communities of color as, it has been found that 26% of Black Americans and 29% of Hispanic Americans live within 3 miles of a Superfund site, a higher percentage than for Americans overall.





"The Greenway Imperative"



UF PRESS

UNIVERSITY OF FLORIDA

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